Executive Session - Kickoff

Doug Glenzinski

Director’s Progress Review of the US-CMS HL-LHC Upgrades

02-Feb-2016

In Case of Emergency

- **Emergency Calls:**
  - Call 3131 from a lab phone
  - Call (630) 840-3131 from a cell phone
- **Fire:**
  - Exit Wilson Hall south stairways to ground floor
  - Follow building residents to assembly area
- **Tornado/Severe Weather:**
  - Exit Wilson Hall south stairways to basement refuge area (behind auditorium)
  - Stay in refuge area until “all clear” is announced

Agenda for Exec Session

- Introductions
- Project Background
- Charge to Reviewers
- Assignments/Write-ups
- Agenda
- Discussion

Introductions

- Please introduce yourself:
  - Your name
  - Your home institution or company and role
  - The area you are reviewing or role at this review

Background

- Upgrades to the CMS detector at the LHC will be needed for the future High Luminosity LHC running period, scheduled to start in 2026 and last about 10 years.
  - These upgrades will be installed during Long Shutdown 3, which is scheduled to last for 30 months, starting in January 2024.
- DOE status:
  - DOE has provided a preliminary budget profile. Funding in FY16 and FY17 appear problematic at this time.
  - The project anticipates receiving Critical Decision 0 approval early in 2016, and therefore has not yet formally entered into the DOE project management system. CD-1 planned in ~1 year from now.
- NSF status:
  - Conceptual Design Phase initiated Nov.2015.
  - Conceptual Design Review scheduled for March 15-17, 2016 in anticipation of MREFC funding.
- This review is to:
  - Inform the laboratory about the state of the overall planning
  - Provide guidance as to readiness to proceed to the CD-0 thru CD-1 stage.
  - Help prepare for NSF CDR.

Themes of NSF Charge

- The charge for the NSF CDR is several pages long. Some themes include:
  - Requirements definition and flowdown;
  - Credible cost estimates summing to a risk adjusted budget <$75M, which is a hard limit; Provisions for scope contingency;
  - Realistic schedule and effects of external dependencies;
  - Coordination of DOE, NSF, International CMS.

Design and Scope Charge Questions

Each **Technical** Subcommittee (Trigger, Tracker, Muons, Calorimeter) will respond to the following questions in their section of the report:

- Have the project's performance requirements been sufficiently defined and do they flow down from the overall CMS plan?
- Are the conceptual designs sound and likely to meet the performance requirements?
- Do the designs capture the entire scope and are they adequately defined to support the cost and schedule estimates?
- Is there an adequate plan for design reviews?
- Is the R&D plan appropriate to mitigate technical risk on the project's timescale?

Cost and Schedule Charge Questions

The **Cost and Schedule** Subcommittee will respond to the following questions in their section of the report:

- Are the cost and schedule estimates credible and realistic?
- Do the estimates meet the funding agency targets?
- Are the estimating methodologies clearly defined and appropriate?
- Has adequate cost, scope and schedule contingency been identified to account for risk?
- Are assumptions used in the estimates, such as support from the core research program, realistic?

Management Charge Questions

The **Management** Subcommittee will respond to the following questions in their section of the report:

- Is the project appropriately staffed and being effectively managed at this stage?
- Are the roles, responsibilities, and contributions of DOE, NSF, and International CMS defined and appropriate?
- Have management plan documents been developed?
- Do the NSF CDR and NSF Project Execution Plan fulfill the NSF's expectations for conceptual design?
- Is there a credible plan for systems engineering functions such as requirements management, interface control, and QA?
- Are the projected resources sufficient to complete design, construction, and installation and are these resources likely to be available when needed?
- Are critical procurements sufficiently understood and coordinated across the organizations involved?
- Is the risk management system in place and appropriate? Have risks been adequately identified?

The **ESH** Subcommittee will respond to the following question in their section of the report:

- Is ES&H being appropriately addressed for this stage of the project?

Reviewer Assignments

Chairperson
Doug Glenzinski, FNAL

Project Management
Brenna Flaugher, FNAL*
Doug Glenzinski, FNAL

Cost and Schedule
Rich Marcum, FNAL*
Suzanne Saxer, FNAL
Mike Gardner, FNAL

ESH&Q
Madelyn Wolter, FNAL*

*Lead

Trigger
Hal Evans, Univ of IN*
Kirsten Tollefson, MSU

Tracker
Jason Nielsen, UCSC*
Gaston Gutierrez, FNAL

Muons
Tom LeCompte, ANL*
Dmitri Denisov, FNAL

Calorimeter
James Proudfoot, ANL*
Julie Whitmore, FNAL

Reporting Structure

- Each subcommittee will answer their respective charge questions and author findings, comments, and recommendations.
- The draft report (in MS Word) will be used for the closeout presentation
- Answers to the questions and any recommendations should be presented at the closeout with CMS's and Fermilab's management.
  - It is good practice to fact check the report with the project team prior to the closeout.

Report Terminology

Findings	Findings are statements of fact that summarize noteworthy information presented during the review.
Comments	Comments are judgment statements about the facts presented during the review. The reviewers' comments are based on their experiences and expertise. The comments are to be evaluated by the project team and actions taken as deemed appropriate.
Recommendations	Recommendations are statements of actions that should be addressed by the project team. A response to the recommendation is expected and the actions taken would be reported on during future reviews.

Committee Deliverables and Deadlines

- Report template (Review Closeout Presentation Format) is posted on Director's Review Webpage

http://www.fnal.gov/directorate/OPMO/Projects/USCMS%20Phase%202/DirRev/2016/20160202/Closeout%20_Template_CMS_DR_01%2026%2016V1.docx

- There is to be one consolidated write-up for each subcommittee including charge questions.
- Write-ups are to be sent to Lisa Temple (ltemple@fnal.gov) by 9:30 AM Thursday so Closeout Dry Run can start by 10:00 AM.
- A final report will be issued within 1 week after the closeout.

Today's Agenda Overview

8:30am-1:15pm today (lunch ~12:15pm): Plenaries in One West

1:15pm-3:15pm today: Breakouts in various

3:45pm-4:30pm today: Subcommittee executive session in Breakout Rooms

- Identify key issues, formulate a list of questions and concerns for your respective area

4:30pm-6:15pm today: Full committee executive session in Comitium

- Identify major issues, formulate a list of questions to send them

Wednesday Agenda Overview

8:00am-9:00am – Answers to homework questions (if required) – Comitium

9:00am-12:00pm – Breakout Sessions

1:00pm-3:00pm – Overflow Breakout Sessions (if required)

3:00pm-4:00pm – Subcommittee Exec Session

4:00pm-6:00pm - Full Committee discussion, writing, dry run - Comitium

Thursday Agenda Overview

- 8am-10am – Final writing, answers to questions - Comitium
- 10am-1pm – Final Dry Run - Comitium
- 1pm – Closeout – One West

Miscellany

- Accessing their documents
  - Contact Lucas Taylor (Lucas.Taylor@cern.ch)
- Coffee breaks
  - When scheduled, will be outside the Comitium except during this morning's plenaries when it will be outside One West
- Lunch
  - Tuesday 12:15-13:15 on WH2X (Buffet)
  - Wednesday 12:00-13:00 on WH2X (Buffet)
  - Thursday, box lunches provided (contact Lisa Temple ltemple@fnal.gov)
- Dinner
  - "No Host" dinner at Two Brothers Roundhouse, Tu @ 7p
  - Contact Noel Wiedman (nwiedman@fnal.gov)

Questions?